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May 10, 1993

Dr. David Stone
Council for Tobacco Research - U.S.A., Inc.
900 Third Avenue
New York, NY 10022

Dear Dr. Stone:

I am writing this letter to request support to help analyze the various thyroid lesions in children unfortunately exposed to radiation after the Chernobyl disaster. In April, 1986, an explosion destroyed a nuclear reactor at Chernobyl in the USSR and released more than 100,000,000 curies of radiation into the atmosphere, the majority of which fell on the territory of Byelorussia, now known as Byelarus. Since 1986, there has been an increase in the incidence of thyroid carcinoma in children in Byelarus, especially from the Gomel region which is known to have received the highest level of radioactivity fallout. The incidence of thyroid carcinoma in children in Byelarus in 1986 was two cases per year, in 1987 four cases, in 1988 five cases, and in 1989 six cases. In 1990, there was a dramatic increase to 29 cases and in 1991 this increased to 55 cases. In 1992, the number is projected to be over 60 carcinomas.

I have recently invited Yuri Nikiforov, a Russian pathologist from the Byelarus Thyroid Center in Minsk, to spend a year with us at Rhode Island Hospital to evaluate and analyze over 100 thyroidectomy specimens from 1991 and 1992 in children exposed to radiation from the Chernobyl disaster. This material includes 65 radiation-induced thyroid carcinomas from children ranging from 5-14 years of age, as well as 40 specimens with other forms of thyroid pathology (adenomas, goiters, thyroiditis, etc.). In addition, we have materials from 35 other adolescents ranging in age from 15-19 years. All patients live in the Republic of Byelarus and more than half were from the Gomel region. The latency period for these tumors to develop is shorter than other radiation-induced thyroid tumors and in addition tumors caused by the Chernobyl disaster appear to present at more advanced clinical stages than those found in the general population.

We would like to request support for supplies and/or technical assistance for the thorough investigation of this unique material. We plan to analyze these tumors not only morphologically but to apply the techniques of immunohistochemistry, electron microscopy, and molecular biology as well. We have just begun to look for mutations in genes thought to be involved in the development of thyroid tumors (such as ret, gsp, ras and p53). By performing this type of integrated analysis we

hope to be able to contribute to the understanding of radiation-induced carcinogenesis and radiation-induced non-neoplastic changes in the thyroid.

This work is a collaborative project between Dr. Gnepp, Director of Surgical Pathology, Dr. Nikiforov and Dr. Jackson, Director of Molecular Biology in the Pathology Department at Rhode Island Hospital. If you are interested we would be happy to submit a research proposal. We are under some time constraints since Dr. Nikiforov is only with us for one year.

Please do not hesitate to contact us with any questions that may arise. Thank you for your consideration.

Sincerely,

Douglas R. Gnepp

Douglas R. Gnepp, M.D.
Director
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